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Brewing.

LETTERS PATENT to Paul Louis Manbré, of Valenciennes, in the Republic of France, Brewer, for an Invention of "IMPROVEMENTS IN BREWING."

(Void by reason of the Patentee having neglected to file a Specification in pursuance of the conditions of the Letters Patent.)

PROVISIONAL SPECIFICATION left by the said Paul Louis Manbré at the Office of the Commissioners of Patents on the 3rd August 1880.

PAUL LOUIS MANBRÉ, of Valenciennes, in the Republic of France, Brewer. "IMPROVEMENTS IN BREWING."

Hitherto it has been the practice in the production of beers to use either malt alone or a mixture of malt and sugar, the malt being the produce of germinated barley, and the sugar being known in the trade as Muscavado, inverted sugar, saccharine, glucose, saccharum, and the like.

The process now in use consists in crushing the malt and subjecting the meal and husk thus obtained to the process of saccharification by mashing, and the worts thus produced are then boiled with hops, cooled, and fermented. When sugar is used it is generally added to the worts in the boiler.

A few attempts have been made to use malted and unmalted big, maize, and oats, but the results were so unsatisfactory, that the attempts were not persevered in, except in the use of big only, but this in only one or two counties in the kingdom.

Beers produced in the above manner contain in solution acrid and empyreumatic substances, and an excess of nitrogenous matters arising from the husk of the malt, the acrid and and empyreumatic substances imparting to the beer a bitter and nauseous taste, and the excess of nitrogenous matters subsequently reacts on the alcohol contained in the beer and transforms it into acetic acid.

Now I have found that by purifying the malt worts, and by subjecting and treating the farinaceous and amylaceous parts contained in the following substances, namely maize, rice, barley, big, oats, wheat, darn, millet, sago, mandioca, potato, arrow root, and the like to the processes of saccharification and purification hereinafter described, and by using the saccharified and purified worts thus obtained

from any one of the above named substances, or from a mixture of several of them, as may be found most convenient, jointly with the purified malt worts, I am enabled to produce beers at a much lower cost of production, and greatly superior in purity, brilliancy, delicacy of flavour, and keeping properties to those produced from malt alone or from a mixture of malt and sugar.

My improved process consists of two parts.

The first part has for object the saccharification of the malt and the purification of the worts, which in the case of producing common ales, porter and other cheap beers is obtained by subjecting the malt to the usual process of crushing, mashing, boiling with hops, and cooling, and by conveying the worts thus obtained into the fermenting vessel to be mixed and fermented together with the worts produced from any one of the above named substances, or from a mixture of several of them, as may be found most convenient. But in the case of producing fine pure flavoured ales, stout, and porter, I treat the malt in the following manner :—

1. I grind the malt into flour and separate the husk or bran therefrom.

2. I dilute the flour free from husk in the required quantity of water, and subject the solution to the action of heat varying from one hundred and fifty to one hundred and eighty degrees Fahrenheit, according to the amount of dextrine and fermentable saccharine it is desired to obtain.

3. I purify the saccharified worts thus obtained by neutralizing the deleterious matters which they contain, and which otherwise would affect the quality, flavour, and keeping qualities of the beer.

4. I boil the purified worts thus obtained with hops, in cooling them in the ordinary way, and conveying them into the fermenting vessel to be mixed and fermented together with the purified worts produced from any one of the above named substances, or from a mixture of several of them, as may be found most convenient.

The second part of my process has for object the saccharification of the amylaceous part contained in the above named substances, either by treating any one of them separately, or a mixture of several of them, as may be found most convenient, and the purification of the worts thus produced, which I obtain in the following manner, taking the use of maize as an illustration :—

1. In extracting from the maize by the most convenient processes now in use the faranaceous and amylaceous part it contains.

2. In subjecting the farina or flour thus obtained, diluted in a sufficient quantity of water, to the action of suitable reagents for the purpose of freeing the amylaceous part from the foreign matters which it contains.

3. In subjecting the amylaceous solution thus obtained to the action of suitable reagents, and to a heat varying from two hundred and twelve to three hundred and fifty degrees Fahrenheit, according to the amount of dextrine and fermentable saccharine it is desired to obtain.

4. In purifying the saccharified worts thus obtained by neutralizing the deleterious matters they contain and which otherwise would affect the quality, flavour, and keeping properties of the beer.

5. In boiling the purified worts with hops and cooling them in the ordinary way; or if preferred, as the worts require no boiling, they may when cooled be conveyed direct into the fermenting vessel, to be mixed and fermented together with the purified worts from the malt.

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